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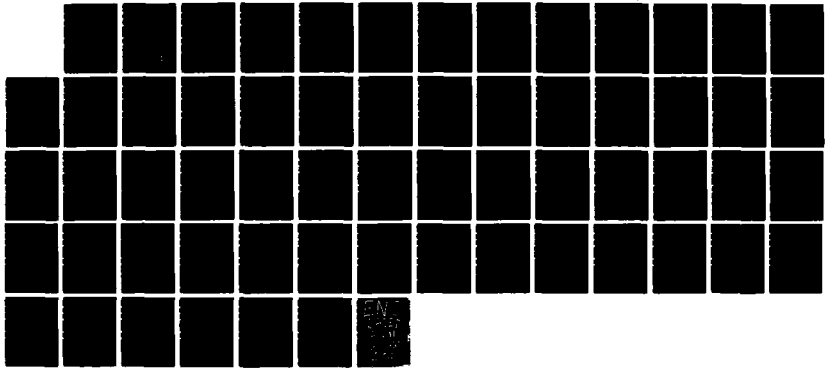

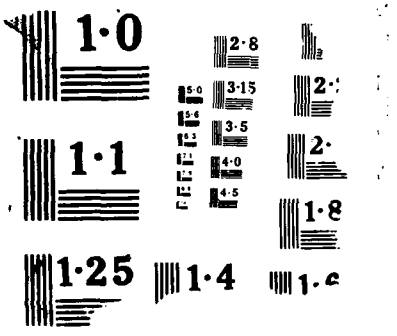
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# THE ESTABLISHMENT OF A QUALITY CIRCLES PROGRAM AND ITS EFFECT ON EMPLOYEE ATTITUDES, MORALE, AND PERFORMANCE AT AN ARMY MEDICAL TREATMENT FACILITY

A Graduate Research Project

Submitted to the Faculty of

Baylor University

In Partial Fulfillment of the

Requirements for the Degree

of

Master of Health Administration

by

Captain Richard A. Varney, MSC

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This study was an endeavor to implement a Quality Circles Program within an Army health care facility and to develop a guide which any health care facility, particularly military, could follow to establish similar programs. Keywords:

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# CHAPTER I

# INTRODUCTION

## Conditions Which Prompted The Study

There were three conditions present which initially prompted the pursuit of this study. First, a need had been identified for Ireland United States Army Community Hospital (IACH) to establish some means which provided documented evidence that each section of the hospital periodically reviewed and evaluated the appropriateness and effectiveness of each service offered. Secondly, an attitude/morale problem at IACH had been identified which necessitated the identification of some means of resolution. Lastly, was the concern of the IACH Commander, to develop some program(s) designed to get all of the individual sections of the hospital and both military and civilian staff members working together to achieve common goals and to promote social activities.

The first condition originated as a result of the August 1982 accreditation survey of IACH by the Joint Commission on Accreditation of Hospitals (JCAH). The major administrative area of interest was quality assurance. In every section surveyed by the administrative member of the JCAH team, he requested documented evidence proving that a periodic review/evaluation of the appropriateness and effectiveness of each service offered had been accomplished. Despite the fact that this requirement was clearly stated in the Quality Assurance section of the 1983 Edition of the JCAH Accreditation Manual for Hospitals, in nearly every case, the section representative expressed considerable confusion as to exactly what was required and how such requirements could satisfactorily be met. After

studying and evaluating this common shortcoming, it was reasoned that quality circles (QCs) could provide a viable method to satisfy these requirements. Specifically, QC committee minutes, which would address areas with JCAH quality assurance emphasis, could facilitate and be a productive way of meeting accreditation requirements, in addition to providing participatory management opportunities for employees within the sections.

The attitude/morale problem at IACH, the second condition prompting this study, was originally identified by the results of a civilian personnel management survey of the facility. The survey was conducted by the Dallas Field Office, United States Army Deputy Chief of Staff for Personnel (DCSPER) in March 1982. The results of the supervisors' survey (APPENDIX A) revealed attitudinal responses which, in most cases, closely corresponded with the results of the Health Services Command (HSC) totals. However, all of these results were in the categories below Army-wide norms for this survey. APPENDIX B revealed that the Fort Knox Medical Department Activity (MEDDAC) supervisors' negative survey responses exceeded both Army and HSC responses in every category. The results of the employee survey (APPENDIX C) were even more disturbing. In twelve of thirteen categories the employee attitudinal responses were below both the Army-wide and HSC norms. APPENDICES D-F provided additional indications of the negative supervisor and employee attitude/morale problem within the organization. APPENDIX F, in particular, highlighted the findings that: (1) Attitude/morale throughout the organization was poor; (2) Overall supervisor responses were generally more negative than Army-wide and HSC responses; and (3) Poor military/civilian relationships

existed in the hospital. Such results might have led one to conclude that a significant attitude/morale problem existed with the hospital employees. However, it was important to be aware that major personality conflicts existed between a key member of the administrative staff and many employees and became very intense during the same time that the survey was administered. Thus, the employees may have associated the survey with this staff member rather than with the DCSPER who was the proponent for the administration of the survey. If this was the case, then the employee responses could have been motivated by "get even" attitudes which would have affected response objectivity. Also, it was later learned that the surveys were distributed late one afternoon with instructions to complete them at home and to return them the following morning. Regardless of what motivated the tone of the employee responses, the aggregate circumstances and results indicated that some kind of employee attitude/morale problems existed. This type of situation is detrimental to creating an environment conducive to the provision of quality health care. Numerous studies, such as Fleming's, have documented that, even when patients receive high quality health care, if they are treated rudely or inhumanely by health care providers, then the patients will perceive the encounter as less than satisfying.[1] The mission of IACH is to provide quality health care and satisfaction for its patients. If the employee attitude/morale problem remained unresolved, then this mission could not be totally accomplished. It was hypothesized that the implementation of a QC program at IACH could have positive effects on employee attitudes/morale which could in turn be positively perceived by the patients. This hypothesis was based on the intangible benefits realized by civilian health care facilities, well documented by the QC literature reviewed for this study.

The last condition which prompted the undertaking of this study was a concern voiced by the IACH Commander during an Executive Committee Meeting. His concern regarded the parochialism displayed between the different sections of the hospital and between the civilian and military staff. He felt that the entire staff rarely worked together to participate in activities as a hospital "community". Since Sprenger, et al[2] found that the informal groups formed by QC programs could produce stronger and closer groups possessing increased senses of loyalty and togetherness, it appeared as though such an approach might be beneficial to IACH.

## Statement Of The Applied Research Question

The applied research question for this study was as follows: "Using IACH as a model for all medical treatment facilities in the United States Army Medical Department system, could the establishment of a quality circles program have positive effects on the attitudes, morale, and performance of its employees?"

## Objectives, Criteria, Assumptions, Limitations

### Objectives

The objectives of this study were to: (1) Determine if the implementation of a QC program at IACH would have positive effects on the attitudes, morale, and performance of its employees; and (2) Provide a guide which any health care facility, particularly military, could follow to establish similar programs.

Regarding the first objective, it was hypothesized that if the study was successful, then the addition of this information to the existing body of knowledge on the subject might encourage other health care facilities to consider the implementation of programs modified to

meet their individual requirements. If the objective was not met, other facilities could consider the positive merits of the program and structure theirs in such a way that the deficiencies experienced could be avoided. Additionally, IACH sections with QCs could still use their meeting minutes for JCAH quality assurance requirements as documented evidence would exist; that the appropriateness and effectiveness of each service offered was periodically evaluated/reviewed. The informal groups created by the QC program could also continue to develop more of a sense of togetherness and commitment to the organization.

Successful accomplishment of the second objective required that the following information be provided: (1) Sequence of events used to set up the QC program; (2) Hiring procedures for the QC facilitator; (3) A substantial bibliography; (4) Compilations of resource contacts for available training aids and workshops; and (5) A synopsis of lessons learned.

## Criteria

Numerous sets of criteria were used to determine if the implementation of a quality circles program did improve the attitudes, morale, and performance of the hospital employees. The first major set of criteria involved the administration of the Air Force Institute of Technology (AFIT) Survey of Work Attitudes (APPENDIX G) as a base line survey in November 1982 and as a follow-up survey in May 1983. The survey provided numerical indications of employee attitudes and morale. The two sets of numerical scores were compared to determine if there was a change in employee attitudes and morale.

The second set of criteria involved the total number of hours of sick leave used per civilian employee, total numbers of civilian employee

grievances submitted, total number of civilian employment terminations, and total numbers of patient complaints. These data were compiled for periods prior to and after the implementation of the program. The two sets of data were then compared to determine if any significant differences were indicative of the success or failure of the quality circles program.

## Assumptions

The following assumptions applied to this study:

a. Based on the results of quality circle implementation at other health care facilities, it was hypothesized that the IACH employees should be eager to have the opportunity to be part of such a participatory management program.

b. The documented effects of quality circles programs on employees' attitudes, morale, and performance in civilian health care facilities should be indicative of what could be expected from the implementation of such a program in a U.S. Army health care facility.

c. The results of the DCSPER survey provided indicators of the attitudes and morale of the employees at IACH; that some kind of attitude and morale problem existed.

d. The documented relationship between employee attitudes and morale which affects employee use of sick leave, submission of grievances, and turnover could be substantiated at IACH.

e. There is a relationship between employee attitudes and morale which affects employee performance, which in turn, affects the number of patient complaints.

f. Funds would be available as needed for training materials and travel.

g. Personnel turnover would be minimal so that most employees would be available to complete both the base line and follow-up surveys.

## Limitations

The limitations of this study were as follows:

a. Hospital employees might not have been eager to participate in quality circles because of poor attitudes and morale or because of distrust in the program -- a product of management.

b. Research was somewhat limited by the amount of available data which were used in the application of the second set of criteria established for the study. Prequality circles data were available for FY 1980 through FY 1982. The data available after the implementation of the quality circles program spanned only the first three quarters of FY 1983.

c. A potential limitation was based on the methodology used by the AFIT personnel who administered the survey. AFIT required that each quality circle group meet at least once prior to the administration of the base line survey for the purpose of becoming organized and providing members the opportunity to decide whether or not they really wanted to participate. This researcher felt that such meetings might influence the quality circle members to answer the survey questions with a more positive attitude due to their awareness of the participatory role which they could anticipate in future management decisions. Thus, when the results of the two surveys were compared, the differences in responses might not be as great as if the quality circle members had completed the base line survey being totally unaware of the potential benefits from the program. Despite all of the limitations considered, it was still felt that the study could be successfully completed.

## Review Of The Literature

### What Are Quality Circles?

The volume of published literature on quality circles is growing at an exceptionally fast pace in a myriad of industrial and service sector settings. The basic definition for quality circles is a group of five to twelve employees from the same work area who meet on a regular basis to identify work-related problems, develop and evaluate alternatives to these problems, and make recommendations to management for procedural changes aimed at eliminating or alleviating the problems.[3]

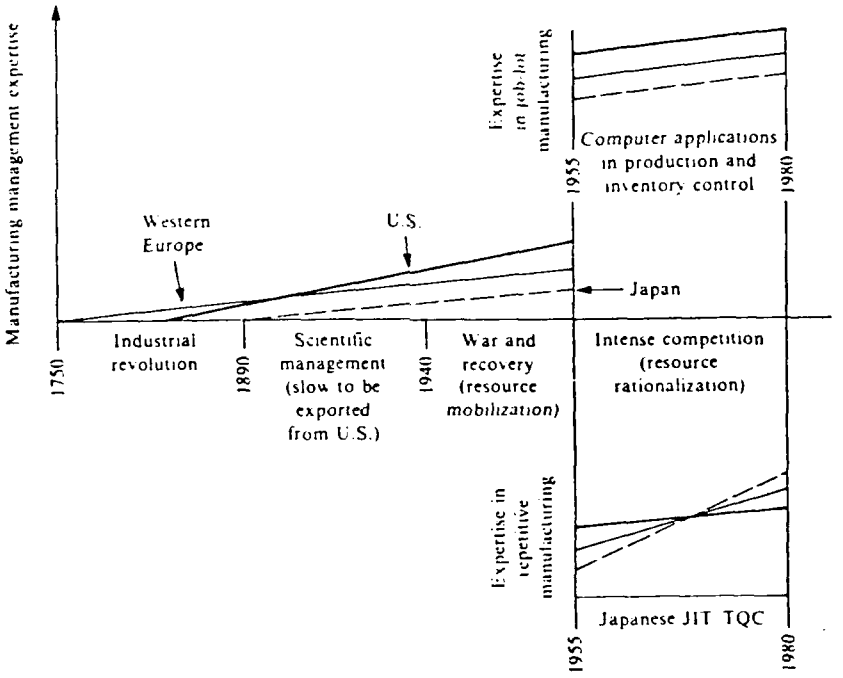
### How Did Quality Circles Get Started?

Many people are of the impression that the Japanese were the inventors of the QC concept. Actually, it was American statistical engineers who conceived this innovative management technique in the late 1930s. The technique was not utilized until after World War II when General Douglas MacArthur used his political influence as the Commander of the United States occupation of Japan to assist the Japanese in their economic and industrial recovery. General MacArthur arranged for an American expert in statistical quality control, Dr. Edward W. Deming, to be a consultant to Japanese industry in an attempt to improve the quality of its products. Originally the intent of the program was to democratize Japanese work place relationships. During the initial implementation phase, Japanese managers accepted the concept as a condition of rehabilitating their industries. Later these same managers regarded QCs and statistical quality control as major contributors to the rejuvenation of the Japanese economy and industry. The project proved so successful that, since the 1950s, Japan's annual productivity growth rate has

been four times that of the United States.[4] The Japanese were so pleased with the results of Deming's work that, in 1951, the Union of Japanese Scientists and Engineers (JUSE) honored him by creating the annual Deming awards. The Deming award is the highest honor that an individual or firm can receive in the field of quality.[5] The growth of Japanese expertise in repetitive manufacturing is graphically illustrated in Figure 1 below.

FIGURE 1

**Figure 1–1.** Development of Manufacturing Management Expertise




SOURCE: Richard J. Schonberger, Japanese Manufacturing Techniques (New York: The Free Press· A Division of Macmillian Publishing Co., Inc., 1982), p.9.

Dr. Deming's successor in the Japanese industrial project was Dr. Joseph M. Juran. In 1952, Dr. Juran was introduced by Dr. Deming to Mr. K. Koyanagi, who had founded the JUSE after the completion of World War II. Dr. Juran was invited by Mr. Koyanagi to lecture in Japan. Beginning in 1954, Juran spent two months in Japan lecturing on the "Management of Quality Control". He returned to lecture approximately eight more times. Dr. Kaoru Ishikawa, a professor at the University of Tokyo and a board member of JUSE, used the efforts of Dr. Juran as the background for his later work with quality circles. Dr. Ishikawa and the JUSE are generally credited with formalizing the modern Japanese quality circle technique in 1962. From its early beginnings, the Japanese QC program has grown to include over eight million Japanese employees.[6] By October 1982, Japan had earned a trade surplus of $23 billion while the United States had a trade deficit of $36 billion.[7]

By 1974 American industry began to realize that there might be something to be learned from the Japanese manufacturing methodology and the concept of quality circles. The American market was flooded with Japanese goods with an ever increasing reputation for high quality and reliability. Many businesses decided that they had better do something before they could no longer compete with the Japanese goods. The first American quality circle program was instituted in 1974 at Lockheed Corporations's Missile and Space Division, Sunnyvale, California. Two Lockheed employees, Wayne Reiker and Donald Dewar, were responsible for the successful implementation of the program.[8] A similar program was also implemented at the Honeywell Corporation in 1974. With Lockheed and Honeywell setting the example, over 300 other large American firms have made commitments to the quality circle concept.[9]

Some of these firms include: 3M, Cordis-Dow, Dover Elevators, Mercury Marine, Westinghouse, Internal Revenue Service, Martin-Marietta, Hughes Aircraft, General Electric, National Cash Register, Tenneco, Solar Turbines, Chicago Title, First Tennessee Bank, Firestone, Tektronix, American Airlines, General Telephone, Cincinnati Milicron, and Hewlett-Packard.[10]

## Benefits Of The Quality Circle Approach

Modern quality circles techniques were first implemented in Japan in 1962. In a most impressive statement, the Japanese Ministry of International Trade and Industry (MITI) attributed savings of $25 billion, since 1963, to the use of quality circles.[11] Many skeptics have said that the quality circle is just another name for the task force approach to problem solving. However, actual results have shown that the return on an investment in quality circles is approximately 6:1; about double that realized from traditional task force techniques.[12] Lockheed, Ford, General Motors, General Electric, Westinghouse, and many other companies have reported savings of from $2 to $10 for every dollar invested in a quality circle program.[13] The program has only been in effect at Lockheed since 1974, yet quality circles are credited with saving over $72 million.[14] Two Boeing-Wichita quality circles chose to develop new standards for documenting old data systems and to mechanize the documentation of new systems. The result was an average of two hours per week saved by each analyst, which amounted to an annual savings of over $100,000.[15] Some American firms, that have started quality circles within the last four to five years, have already reported that they improved productivity by as much as 40 percent.[16] The literature revealed that the list of the success rates of quality circles in business and industry was virtually endless.

## Quality Circles in Health Care

The application of quality circle programs to health care settings was much slower than in major industry. This was mainly due to the great numbers of skeptics who felt that such a production-oriented concept had no place in health care settings where results were not so easily measured or quantified. Gradually the hesitancy to apply quality circles to health care settings began to decrease as providers concentrated on the participative management aspects of the concept which have been credited with causing improvements in employee attitudes, commitment, and morale; reducing absenteeism; improving retention and recruitment; and improving productivity.[17] One hospital, with quality circles, reported a nursing turnover rate of less than 10 percent and declining, while the national average was approaching 50 percent.[18] In 1980, the first hospital quality circle programs were started at Mount Sinai Medical Center of Greater Miami, Miami Beach, Florida; Barnes Hospital, St. Louis, Missouri; and Henry Ford Hospital, Detroit, Michigan.[19]

In a recent article in Modern Healthcare, George H. Labovitz, Ph.D., President of Organizational Dynamics Inc., Burlington, Massachusetts, stated: "It's (quality circles) the hottest thing around (in the health care industry). The reason is that this stuff puts teeth in participative management."[20] The article went on to state that the real goal of quality circles was to improve the quality of work and employee's morale by making them part of the management process. This concept was included in much of the literature reviewed for this study. Ann Haggard's article stated: "Studies of worker attitudes show that employees rank opportunity to express opinions and

feelings freely to supervisors first among the program's (quality circles) rewards."[21] Ken Allen listed getting people involved in decisions and plans as one of his three recommended methods of increasing employee productivity.[22] Similarly an article in Small Business Report stated that subordinates, who are allowed to make their own decisions on how work will be performed, show a marked improvement in motivation.[23]

Since the Mount Sinai Medical Center of Greater Miami was the first hospital to implement quality circles in the United States, they are often asked to provide the results of their programs. Norma Ederder, Director of Human Resources at Mount Sinai provided credence to a general statement that was made earlier when she stated: "Results are calculated not only in cost savings but also in time savings, reduction in errors, reduced absenteeism, reduced turnover, and the number of grievances, improved employee morale and attitude, and greater cooperation."[24]

Mount Sinai's dietary quality circle developed a solution to the problem of giving the wrong food to patients who ordered items not on the hospital's printed menus. The circle members determined that the problem was caused by employees omitting items from patient meal requests in their rush to meet a 3 p.m. deadline for getting orders to the kitchen. The quality circle recommended to management that the deadline be extended to 4 p.m. Management was very impressed with the proposal and implemented it immediately. The new procedure was reported to have greatly reduced errors in charting patient meals.

A second Mount Sinai quality circle was started in the transport section where a problem existed due to the small numbers of wheelchairs being returned to the transport area. The quality circle evaluated the problem, formulated

solutions, and presented them to management. The solutions were immediately implemented and the number of wheelchairs being returned to the transport area dramatically increased. The transport manager noticed that his employees displayed markedly improved attitudes once the operation began to run more smoothly. His comments were so significant it was felt appropriate to include them at this point;

> Within a short period of time, our investment started to pay dividends in a swelling enthusiasm where we had previously seen lackluster behavior. What kind of price tag do you put on behavioral changes? How do you calculate dollars when a group of employees who were previously disinterested or criticizing, become actively involved in identifying, researching, and developing solutions to the nagging day-to-day problems they fight.[25]

The radiology quality circle at Mount Sinai identified and solved a major problem in their area; too many x-rays had to be retaken due to the improper use of equipment. An improved training program was developed and implemented. Officials stated that the new program had already resulted in a savings of $12,000 in x-ray film alone.[26] The quality of patient care was also felt to be improved since the patients were exposed to less radiation.

The engineering quality circle at Mount Sinai collected data which revealed that the practice of having employees individually take their uniforms to and from the linen service generated lost time equivalent to $10,000 annually and approximately $500 in replacement costs for lost uniforms.[27] The new procedure recommended by the quality circle and immediately adopted by management created a system of collecting and distributing uniforms in which one person spent one hour per week going to and from the linen service. The cost of the one hour per week and the cost of transporting the uniforms subtracted from the previous $10,000 loss resulted in an estimated annual savings of $8,500.[28] Additionally, in the first three months under the new system, no uniforms were reported missing.

A rather substantial savings of $45,000 was realized through the work of the Mount Sinai operating room quality circle.[29] The hospital also implemented more efficient charting methods in three departments, redesignated a pharmacy prescription area for more efficient patient service, and relocated recovery room supplies to provide for easier accessibility.

Ms. Ederder stated that one indication of the popularity of the quality circle program at Mount Sinai was the number of departments that wanted to start them. Mount Sinai started with six quality circles in October 1980 and had doubled that number in twelve months time.[30]

Barnes Hospital, St. Louis, had over 25 quality circles in operation by August of 1981 in such areas as nursing, housekeeping, dietary, laboratory, and security.[31] The program proponents at Barnes felt that the cost savings alone justified at least a pilot program when considering improvements in service, decreases in patient complaints, and increased enthusiasm and job satisfaction for employees. Officials at Barnes stated that employee enthusiasm was infectious and had a positive impact on patient care. One Barnes quality circles facilitator put it this way:

> Hospital employees are starved for recognition. QC goes a long way in providing the communication opportunities they need. In the past few months, I've seen Circle members literally blossom. When that happens over and over again, you know you're onto something good.[32]

Naturally managers are also very much interested in the tangible and measurable benefits realized from quality circle programs. Many consultants have cited various cost savings that were realized as a result of employee problem solving and increased productivity directly attributable to improved employee morale and commitment. Barnes Hospital formed a quality circle of nurses and operating room technicians to address the issue of excessive

overtime. After their recommended changes were implemented by management, overtime in cardiothoracic surgery was cut by 70 percent, with a total savings of $12,000 per year.[33] The surgical nursing unit quality circle devised a plan to make the best use of personnel during the two hour over-lap period when the ten hour shifts changed.[34] Specific costs saved were not listed.

Henry Ford Hospital, Detroit, implemented five quality circles whose initial savings projects are listed below:[35]

a. Dining Services: Work assignments and job descriptions for food service assistants were redesignated. The payroll savings were listed as $7,000 per year.

b. General Stores Warehouse (Greenfield facility): Alternative reshelving methods were tested. Performance comparisons revealed an 0.8 percent increase in items selected per order per staffer. The approximate productivity increase was 12 percent.

c. Environmental Housekeeping Services: Alternative work procedures were developed to reduce bag usage and to develop security measures to prevent pilferage. The estimated annual savings was $15,600.

d. Occupational Therapy: A staff rotation schedule was developed which provided for improved staff development and increased scheduling flexibility. The benefits of the new schedule were considered to be of the intangible type.

e. Business Office (West Bloomfield Center): New procedures and controls were implemented to identify and correct billing errors. During one week, 38 errors were identified which represented $4,000.

According to one author, "patience is not characteristic of management in this country."[36] This is one of the big differences between Japanese and

American management practices; the Japanese understand patience and are willing to take the time to listen to everyone before proceeding with a decision. Japanese managers are more concerned with the quality of the outcome than with the speed of the decision. Likewise, they are more concerned with long term gain than short term gain.[37] Proponents of quality circles programs are required to display some of this uncharacteristic patience because it normally takes at least 18 months after a program is started for improved quality and productivity to be realized.[38] Many skeptics have stated that employee participation in quality circles only results in lost time.[39,40] Bob Frank of Barnes Hospital feels differently about it:

> . . . we believe the time spent in QCs is time at work for every employee, important work time where they're finding constructive ways to make the rest of their time more productive, more beneficial to the institution and to themselves as individuals and professionals.[41]

Despite all of the long and short term goals and all of the tangible and intangible benefits associated with quality circles, the ultimate long term goal of the entire concept is to improve the quality of health care.[42]

## Research Methodology

### Selection Of Variables To Be Evaluated

The introductory phase of research involved an extensive review of all available quality circles literature, with particular emphasis on the health care area. Initial coordination involved the Civilian Personnel Branch, Personnel Division, IACH, to collect the needed data on civilian use of sick leave, turnover, and submission of grievances. Data on patient complaints were made available by the Patient Representative through the Clinical Support Division, IACH.

The basis of the research methodology was the administration of the AFIT Survey of Work Attitudes (APPENDIX G) base line survey in November 1982 and follow-up survey in May 1983. Both surveys were identical, with the follow-up survey being given to as many of the same individuals who completed the base line survey as possible. The identity of each participant was kept confidential. An impartial person employed by IACH was selected to maintain a list of participants and to match Social Security Account Numbers (SSAN) with a seven digit code number placed on the computer scored response sheet. When the follow-up survey was completed, the custodian of the list used the SSANs as the common denominator to match the seven digit code numbers from the base line survey with those of the follow-up survey. The SSANs were then discarded, and the only list forwarded to AFIT contained pairings of seven digit code numbers.

The employee survey was quite extensive in nature and was organized into two parts. Questions 1 through 7 in Part I were demographic in nature and were not utilized for the purpose of evaluating employee attitudes and morale. In order to evaluate employee attitudes and morale based on their responses to the survey questions, all of the questions were grouped into categories based on what was considered to be a positive response; e.g.: Question 8, Part I reads: "How do you feel about your job?" The available responses were; (1) Delighted; (2) Pleased; (3) Mostly satisfied; (4) Mixed (about equally satisfied and dissatisfied); (5) Mostly dissatisfied; (6) Unhappy; and (7) Terrible. The employee answering this question could

blacken any single response on the computer-scored answer sheet from 1 to 7. A response of 1 would indicate delighted; a response of 2 would indicate pleased; and so forth. Due to the particular wording of Question 8, Part I, a response of 3, 2, or 1 indicated that the employee who answered this question had a positive attitude and good morale. Conversely, a response of 5, 6, or 7 indicated that the employee had a negative attitude and poor morale. In the aggregate sense, if the average (mean) numerical response of all employees fell somewhere between 3 and 1, it could be concluded that, overall, the employees were either delighted, pleased, or mostly satisfied with their jobs. If the average numerical response of all employees fell somewhere between 5 and 7, the converse would be concluded. The median response for Question 8, Part I is 4. Again, due to the particular wording of this question, a response on the numerically lower side of the median (1-3) would be considered a positive response. Conversely, a response on the numerically higher side of the median (5-7) would be considered a negative response. Using this methodology, all of the survey questions were grouped into the categories listed in Table 1. As an example: Question 8, Part I was placed in Category II since a response indicative of positive attitude and good morale was considered to be from 3 to 1.

TABLE 1

Categories of Survey Responses

| CATEGORY I<br>High Side of Median<br>Of All Available Responses | | | CATEGORY II<br>Low Side of Median<br>Of All Available Responses | | |
|---|---|---|---|---|---|
| Negative | | Positive | Positive | | Negative |
| 1 2 3 4<br>1 2 3<br>1 | 4.5<br>4<br>1.5 | 5 6 7 8<br>5 6 7<br>2 | 1 2 3 4<br>1 2 3<br>1 | 4.5<br>4<br>1.5 | 5 6 7 8<br>5 6 7<br>2 |
| | Block A | | Block B | | |
| PART I | 13-18, 20-21, 23-25,<br>27, 29, 32-33, 35-48,<br>50-54, 60-66, 68-71<br>72-76, 79-80 | | 8-12, 19, 22, 26,<br>28, 30-31, 34, 49,<br>55-59, 67, 77-78 | | |
| | Block C | | Block D | | |
| PART II | 1-9, 12, 14-15,<br>17-24, 26-28, 30,<br>32-33, 35, 38<br>40-43, 45-54 | | 10-11, 13, 16<br>25, 29, 31, 34,<br>36-37, 39, 44 | | |

Once the results of the base line and follow-up surveys became available, aggregate numerical mean responses for each of the four blocks of questions in Table 1 were calculated and compared to determine what affect the implementation of a quality circles program had on employee attitudes and morale. For example, if the base line aggregate numerical mean response for Block A was 5.5, any follow-up aggregate numerical mean response greater than 5.5, for Block A, would indicate that the implementation of a quality circles program did have some positive affects on employee attitudes and morale for QC group respondants. Conversely, any response of 5.5 or less would indicate no affect or a negative affect respectively.

## Footnotes

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[3]_____, Introduction to the International Association of Quality Circles, Pamphlet, (Undated), p. 2.

[4]Laurie Protho, "Quality Circles Redistribute Decision-Making," Hospital Forum, (May/June 1981), p. 14.

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[6]_____, Introduction to the International Association of Quality Circles, Pamphlet, (Undated), p. 1.

[7]Diane Campbell and Bruce P. Hatfield, "How Quality Circles Work," Hospital Topics, (March/April 1982), p. 46.

[8]Couger, "Circular Solutions," p. 136.

[9]Ann Haggard, "Quality Circles," Nursing Management, (February 1983), p. 32.

[10]_____, Introduction to the International Association of Quality Circles, Pamphlet, (Undated), p. 5.

[11]Couger, "Circular Solutions," p. 135.

[12]Ibid.

[13]Haggard, "Quality Circles," p. 32.

[14]Couger, "Circular Solutions," p. 136.

[15]Ibid., p. 140.

[16]Donald E. L. Johnson, "Quality Circles Put Workers In Charge Of Their Productivity," Modern Healthcare, (September 1981), p. 68.

[17]G. Lawrence Langford, "Quality Circles: An Innovative Cost Containment Process for Health Care," Hospital Management Review, (November 1983), p. 6.

[18]Campbell and Hatfield, "How Quality Circles Work," p. 32.

[19]Dan Lippe, "Quality Circles Roll Into Hospitals," Modern Healthcare, (August 1982), p. 108.

[20]Ibid.

[21]Haggard, "Quality Circles," p. 32.

[22]Ken Allen, "3 Ways to 'Up' Employee Performance," Successful Supervisor, (1980), p. 1.

[23]_____, "The Art of Delegation Part I," Small Business Report, (November 1982), p. 23.

[24]Johnson, "Quality Circles Put Workers In Charge Of Their Productivity," p. 69.

[25]Johnson, "Quality Circles Put Workers In Charge Of Their Productivity," p. 69.

[26]Langford, "Quality Circles: An Innovative Cost Containment Process for Health Care," p. 6.

[27]Marge Maser and Elaine Rendall, "Implementation At Mount Sinai Medical Center of Greater Miami," The Quality Circles Journal, (August 1981), p. 13.

[28]Ibid.

[29]Patricia E. Raber, "Improving Quality Care Through Quality Circles," Today's Nursing Home, (January 1982), p. 24.

[30]Maser, "Implementation At Mount Sinai Medical Center of Greater Miami," p. 157.

[31]Haggard, "Quality Circles," p. 32.

[32]Sprenger, "Circles," p. 88.

[33]Lippe, "Quality Circles Roll Into Hospitals," p. 110.

[34]Sprenger, "Circles," p. 86.

[35]Kenneth Buback, "The Implementation of Quality Circles At Henry Ford Hospital," Quality Circle Digest, (July 1981), p. 23.

[36]C. Philip Alexander, "Learning From the Japanese," Personnel Digest, (August 1981), p. 617.

[37]Tom Furlong and Karl Schoenberger, "When East and West Clash At Management Level," The Courier-Journal, (Louisville, Kentucky), 8 August 1982, sec. 5, p. E2.

[38]Johnson, "Quality Circles Put Workers In Charge Of Their Productivity," p. 68.

[39]Sprenger, "Circles," p. 87.

[40]Couger, "Circular Solutions," p. 135.

[41]Sprenger, "Circles," p. 87.

[42]Ibid.

CHAPTER II

DISCUSSION

## The Establishment of A Quality Circles Program

The idea of implementing a QC program at IACH first began in the spring of 1982 as the result of collaboration between the hospital Commander, COL John P. Canby; the Administrative Resident, MAJ Angelo A. Armondo; and other key staff members. Since there was no one assigned to the facility who had a great deal of QC knowledge or experience, it was decided to request the assistance of an outside resource, viz, Major Russell F. Lloyd, assigned to the Air Force Institute of Technology (AFIT), Wright-Patterson Air Force Base, Ohio. The original intent was to expose as many members of the hospital supervisory chain as possible to the QC concept to determine if there was sufficient interest in the hospital to warrant the establishment of a pilot QC program. Once Major Lloyd had agreed to visit IACH to make a presentation, a notice (APPENDIX H) was distributed to all department, division, and service Chiefs to attend a two and one half hour briefing on 22 April 1982. Attendance rosters on file revealed that a total of 48 personnel attended the presentation with quite a few expressing an interest in the program.

Further documentation found in the QC files (APPENDIX I) revealed that a planning meeting was held on 2 June 1982. At this time a decision was made to establish a MEDDAC QC Steering Committee to oversee the implementation of the pilot QC program at IACH and to perform the myriad of functions included at APPENDIX J. The first committee meeting was held on 10 June 1982. Much of the discussion centered around Major Lloyd's presentation and the role of the Steering Committee. The Fort Knox Directorate of Engineering and Housing (DEH) already had a QC pilot program functioning at this time. Thus, the MEDDAC

QC Steering Committee spent a substantial amount of time reviewing the DEH Standard Operating Procedure (SOP) for Quality Circle Implementation (APPENDIX K). This document was modified to fit the needs of the hospital (APPENDIX L). The MEDDAC QC Steering Committee also capitalized on the fact that the DEH had a school-trained QC facilitator (Ms. Dianne Stoller, Ft. Knox Civilian Personnel Office employee) who was included as a member of the MEDDAC QC Steering Committee. In many of the early MEDDAC meetings, Ms. Stoller was invaluable in providing the committee with guidance as to how to proceed in many areas. Since the committee had decided to proceed with the QC pilot program, correspondence (APPENDIX M) was sent to the AFIT on 14 June 1982, again requesting the assistance of Major Lloyd.

The second meeting of the MEDDAC QC Steering Committee was held on 16 June 1982. SFC Johnson from the Fort Knox Organizational Effectiveness (OE) Office attended the meeting. As a trained QC facilitator, he offered his knowledge and training to assist the committee. The following topics were discussed at the meeting: The request for assistance that was sent to the AFIT on 14 June, the proper size (10-12 people) for QC groups, publicity, and milestones.

The Steering Committee met frequently during the infancy stages of the program as was evidenced by the third meeting of the month which was held on 30 June. On this date the committee made the following recommendations:

a. That the committee meet twice monthly on the first and third Wednesdays at 0900 hours.

b. That the in-coming Administrative Resident be assigned as the temporary MEDDAC and Steering Committee QC Facilitator.

c. Insure that steering committee members not participate as members of individual quality circles.

In early July 1982, correspondence (APPENDIX N) was received from the AFIT in response to the 14 June request for assistance. The correspondence stated that assistance would be provided by Dr. Tony Mento and that Major Lloyd would contact Major Armondo. However, Major Armondo had already departed prior to the 30 June meeting and available records reflect that nothing further was done with the program until after 21 July 1982.

On 29 July the steering committee appointed the new Administrative Resident as the new temporary facilitator for the IACH QC Program. The following topics were discussed during the remainder of the meeting:

a. The Adjutant informed the committee that Dr. Mento would conduct an assistance visit with IACH as requested on 11 August 1982. Both the MEDDAC and DEH would meet with Dr. Mento to discuss QC program funding, milestones, and organizational requirements. This discussion would be conducted by members from both organizational steering committees at a get acquainted dinner during the evening of 10 August.

b. Publicity for the program would be disseminated at the Administrative Staff Meeting; Combined Staff Conference; in-service training sessions, as part of the NCO Development Program; in the hospital daily bulletin; and at meetings with all supervisors where two video tapes available from the Fort Knox OE Office would be viewed and discussed.

c. The committee concluded its review of the draft SOP.

On 3 August 1982, a notice (APPENDIX O) was distributed requiring all supervisors to attend Dr. Mento's presentation on 11 August. The philosophy of the QC program is that all participation should be voluntary. The 11 August

presentation was made mandatory so that as many supervisors as possible could receive more information on the QC concept. It was hoped that they could later be able to make more educated decisions as to whether or not they wanted to become involved with the program.

The 4 August 1982, steering committee meeting was highlighted by the visit of Mr. David Wright who was the full-time QC facilitator for the DEH at Fort Knox. Mr. Wright discussed the following:

a. The philosophy and goals of the QC program.

b. The role of the QC facilitator and the essential qualifications needed for the job (APPENDIX P).

c. The normal sequence of events in making the decision to implement a quality circles program (APPENDIX Q). (This was the one area where the hospital commander wished to expedite the normal sequence of events by dispensing with the workshops and training for the various levels of the supervisory chain. The Commander, Executive Officer, and other key members of the staff already supported the QC concept, so it was felt that time and resources should not be spent in going through the normal implementation procedure. Therefore, it was decided to directly solicit employee involvement in the program. If the level of employee interest proved to be sufficient to warrant a pilot program, then one would be initiated.)

d. Lastly, Mr. Wright discussed the various organizations available which provided QC training and the various QC training aids which were available. A compilation of the various organizations/firms that offer QC training courses is provided at APPENDIX R. Examples of course content offered by the American Hospital Association (AHA), AFIT, and the International Association of Quality Circles (IAQC) are included at APPENDICES S, T, and U respectively. Mr. Wright

also provided a resource for ordering U.S. Navy videotapes on QCs. The ordering procedure is included at APPENDIX V. To round out the list of available QC resources, lists were compiled of the various organizations/ firms which provide QC seminars and consulting firms which will come directly to facilities and set up their entire QC programs. These lists are provided at APPENDICES W and X respectively. A good example of the QC consulting firm literature that is available is provided at APPENDIX Y. A complete catalog of QC training and educational materials is available from the Quality Circle Institute in Red Bluff, California.

The remainder of the 4 August steering committee meeting was spent discussing Dr. Mento's visit. Plans were made to have members of the committee meet with Dr. Mento for dinner on the evening of 10 August. On 11 August, Dr. Mento planned to meet with key IACH and DEH command and staff members in the IACH Conference Room from 0830 to 1000 hours. A separate session was to be held with all IACH supervisors and division chiefs from 1000 to 1200 hours in the Plans, Operations and Training Division Conference Room.

The get acquainted dinner with Dr. Mento on 10 August was well attended by representatives from both organizations. It proved to be a good forum to informally exchange ideas, philosophies, and experiences about the QC concept.

Dr. Mento's two scheduled sessions for 11 August proceeded equally well. At the 0830-1000 hours session, attended by the military's equivalent of top-level management, Dr. Mento explained AFIT's role in conducting the base line and follow-up employee attitude surveys to determine the worth of QCs in their organizations. A summary of his presentation is provided at APPENDIX Z.

Dr. Mento presented a videotape at the 1000 hours session which provided the attendees an overview of the QC concept and of the many benefits to be

realized from the implementaton of such a program. This session was very well attended and was highlighted by a question and answer portion which indicated that many of the personnel present were very much interested in the concept.

Much of the discussion at the 18 August QC Steering Committee meeting centered around Dr. Mento's visit. The committee decided to formally solicit employee input to determine if there was sufficient interest to start a QC pilot program. It was felt that the program could be started with a minimum of three to four circles. In order to complete the AFIT surveys, the committee would also have to pick one control group to be paired with each QC group. Care would have to be taken in the selection of control groups that had similar work environments, missions, and job pressures to the QC group to which they would be paired.

Two other important business matters were also conducted at the 18 August meeting. First, it was decided that the committee itself needed to be re-structured to be more representative of top-level management personnel who were the decision makers and resource controllers. At that time the committee consisted of the following:

a. Executive Officer (Chairman) 0-6.

b. Adjutant (Recorder) 0-3.

c. Administrative Resident (Facilitator) 0-3.

d. Nursing Methods Analyst 0-3.

e. Representative, Department of Nursing 0-3.

f. Representative, Logistics Division 0-3.

g. Representative, Personnel Division.

h. CHAMPUS Representative.

i. Patient Representative.

j. Civilian Representative for Chief, Professional Services.

k. Civilian Union Steward AFGE.

The second item of business was the identification of the need for the committee to select a permanent QC Facilitator once the decision was made to proceed with a pilot program. This person would eventually need to attend a facilitator training program.

The initial solicitation of employee voluntary participation in the IACH QC Pilot Program was accomplished by sending a Disposition Form (DF) (APPENDIX AA) to every duty section in the organization. Negative responses were received from the following: Community Mental Health Activity, Preventive Medicine Activity, Automation Management Officer, Pharmacy Service, Department of Neuropsychiatry, Department of Pediatrics, Patient Administration Division, and Department of Pathology. Positive responses, with numbers of interested personnel indicated in parenthesis, were received from: Logistics Division (39), Department of Medicine (31), Clinical Support Division (16), The Blood Bank Center (14), Social Work Service (10), Personnel Division (8), and the Radiation Protection Officer (3).

Based on the response to APPENDIX AA, the 15 September QC Steering Committee meeting proved to be extremely productive. A summary of the items of business conducted is presented at APPENDIX BB.

On the evening of 30 September, members of the steering committee (Executive Officer, Administrative Resident, and Adjutant) and the Clinical Support Division QC leader attended a meeting of the Greater Louisville Chapter of Quality Circles in Louisville, Kentucky. The meeting consisted of a dinner

and rotating employee management presentations by QC members from the Louisville Office of Health and Human Services, the Ford Motor Company, the Naval Ordnance Center, and General Electric. The meeting was very informative and the entire IACH QC Steering Committee received a complete briefing on this meeting at the 6 October session.

Since the 15 September QC steering committee meeting, this author worked on the forms necessary to recruit a full-time civilian QC facilitator. Much of the information used to complete the Standard Form (SF) 52 (APPENDIX EE) and the DA Form 374 (APPENDIX FF) for this hire action was adapted from the documents provided at APPENDIX GG. Much assistance was also received from the IACH Civilian Personnel Actions Section. The completed action was forwarded to the Fort Knox Civilian Personnel Office (CPO) on 1 November. In preparing the SF 52, the Executive Officer and Administrative Resident concluded that it would be most appropriate for the QC Facilitator to work for the Chief, Plans, Operations, and Training Division.

At the 3 November meeting, the steering committee members were informed of what actions had been completed and of what decisions had been made in submitting the hire action on the QC facilitator. They were also informed that Robert Steele, Ph.D. (AFIT) would be administering the base line employee attitude survey on 8 and 10 November.

A DF (APPENDIX HH) announcing the base line survey was distributed to the participating sections on 3 November. The logistical requirements for the administration of the survey were minimal but required the following:

a. An area capable of holding 50 to 60 people.

b. Adequate writing surfaces such that the blocks on the computer scored answer sheets could be easily blackened.

c. An overhead projector for the use of the AFIT representative.

d. The selection of an impartial individual viewed by employees as non-representative of management and one who could be trusted to respect the anonymity of employee responses to survey questions.

The actual administration of the survey proceeded very smoothly. The only significant problem experienced was that only one individual from the Department of Surgery (control group for the Department of Medicine) participated in the survey. In retrospect, this was the only section where the Department Chief was unavailable and APPENDIX HH was left with his secretary. It was felt that there would have been a better response from this section had the requirement been discussed directly with the Chief, Department of Surgery. Accordingly, it was decided to have the Department of Pathology double as the control group for both the Department of Medicine and The Blood Bank Center.

With the administration of the base line survey, there was also a problem encountered with Department of Nursing personnel performing duty in the Department of Medicine. The Chief, Department of Primary Care and Community Nursing (C, DPCCN) instructed her personnel, who were working in the Department of Medicine, to not participate in the survey since they were Nursing Service personnel. This problem was quickly identified and rectified. The situation highlighted one of the major frustrations experienced in completing this study: people who were either uneducated about the QC concept or refused to accept its merits, were extremely uncooperative in assisting in the completion of the project.

The relationship existing between the personnel assigned to the Department of Nursing and performing duty in the Department of Medicine was similar to the relationship between the receptionist personnel assigned to the Clinical Support Division (CSD) and performing duty in the various outpatient areas. The CSD group did form a QC; however, it was not considered to be a traditional group since even though the receptionists were performing similar duties, they were not working in the same work environment. For example, the problems experienced by the receptionist in the Department of Pediatrics were very different from those experienced in the Departments of Nuclear Medicine or Radiology. Because the CSD group was so enthusiastic in initiating a QC, it was decided to allow them to form one and keep a close watch on it to see what developed.

Once the base line employee attitude survey was completed, the remaining primary mission was to train the QC members so that they would have the tools to begin problem-solving projects. After careful review of the many types of training materials available, it was recommended that the following listed materials be purchased from the Quality Circle Institute:

a. Handbook For Medical Facilities (Facilitator's Manual)

b. Leader Manual And Instructional Guide For Medical Facilities

c. Member Manual For Medical Facilities

d. Basic Training Modules - eight sets of slides and cassette tapes covering the following subjects:

(1) A Case Study And Problem Prevention Techniques

(2) Brainstorming

(3) Data Collecting Techniques

(4) Data Collection Formats, Plus Graphs

(5) Decision Analysis Using Pareto

(6) Basic Cause And Effect Problem Analysis

(7) Process Cause And Effect Problem Analysis

(8) The Management Presentation

The total cost of this training package was approximately $1740. After the 17 November meeting, the steering committee forwarded a request for funds to the Program Budget Advisory Committee (PBAC) for approval. The steering committee also agreed that it would be necessary to hold future meetings only once a month. A summary of the items of business conducted at the 17 December and 19 January QC Steering Committee meetings is presented at APPENDIX II.

Mr. Charles W. Eckels was hired as the IACH QC Facilitator on 10 January 1983 and assumed his duties with great enthusiasm and vigor. He immediately began training each of the QC groups and was guest speaker at the MSC/AMSC inservice training session on 16 February. Mr. Eckels presented a very thorough overview of the QC concept and philosophy replete with his personal anecdotes. The presentation was extremely well conducted and appreciated by all who were in attendance.

The 23 February QC Steering Committee meeting revealed that, due to budgetary restraints, the request for funds to send Mr. Eckels to Louisville for QC facilitator training had not been favorably considered by the Program Budget Advisory Committee (PBAC) and was subsequently disapproved by the IACH Commander. For the remainder of the meeting, the committee viewed the training slides and tapes on the subjects of Problem Solving-Prevention Techniques and Brainstorming. The new QC draft SOP was also circulated to

all members for concurrence/non-concurrence by 7 March. Committee members were provided with a DF listing the individual QC groups, their nicknames, group leaders, and the date, time, and place where each group regularly met (APPENDIX MM). All present were encouraged to attend their individual QC meetings.

In addition to training all of the QC members, Mr. Eckels was also involved in completing numerous written tasks appropriate to his position. Initially, in collaberation with his supervisor, he developed a Job Performance Planning Worksheet (APPENDIX NN) for his new position. He drafted the IACH Commander's statement of support for the QC program (APPENDIX OO) which was distributed on 28 February. Mr. Eckels also published the first Quality Circles Newsletter (APPENDIX PP) which was circulated on 21 March.

At the 23 March steering committee meeting, Mr. Eckels officially stated that he would be leaving IACH effective 26 March for a permanent GS-12 position with the US Army Second ROTC Region at Fort Knox. There were two legitimate reasons for Mr. Eckels' decision to leave IACH:

a. The first was the lack of job security. Funding for the position was only guaranteed for one year. A project to have the position made permanent had been delayed. He therefore felt the need to protect himself by seeking a permanent position elsewhere. Until such time as the QC Facilitator position at IACH becomes established as a permanent TDA position, this same process can be expected to recur. In order to establish a permanent position, historical workload data must be compiled and documented to justify such a position. Keeping an employee in such a tenuous and temporary position long enough to collect this data could prove to be difficult.

b. Secondly, although he understood the budget constraints, Mr. Eckels still felt a let down and lack of organizational support. He stated privately that if the funds for his training had not been disapproved he would have considered staying with IACH despite the tenuousness of the position. The lesson learned here was that "you should not promise what you don't have to give." Budget constraints are a fact of life in the military, but better prior planning could have prevented the bad feelings that were created in this situation. The money should have been considered at first. If funding was unavailable, a convenient training date could have been picked at the beginning of the subsequent budget cycle or fiscal year and a firm commitment made.

The 23 March meeting continued with the approval of the IACH QC logo, which appeared on the front of Mr. Eckels' 21 March newsletter (APPENDIX PP), and with slide and tape training presentations on Data Collection, Data Collection Formats and Graphs. Once the IACH QC program was established and routine training was being accomplished, the role of the steering committee decreased. Consequently, it was decided to have Mr. Eckels present one of the eight QC member training sessions to the steering committee at each meeting. This practice allowed the committee members to get a better idea of the training that their personnel were receiving and the committee members could more intelligently discuss the concepts among themselves and their employees.

The April steering committee meeting was not held due to conflicts with the IACH Field Training Exercise (FTX). However, coordination was begun with AFIT to administer the follow-up employee attitude survey on 4 and 5 May.

Notifications to each participating section were delivered personally on 22 April (APPENDIX QQ). Employee attendance at the follow-up survey turned out to be very poor with only 109 personnel of a possible 224 completing the survey. It was learned at this time that many employees were required to take the base line survey in November 1982 by sections who were over-zealous to get a good turn out of their employees at the survey. As a result, two problems in communication were discovered:

a. It should have been more thoroughly stressed that attendance at the base line survey was to be absolutely voluntary.

b. Any employee who voluntarily completed the base line survey would be required to complete the follow-up survey.

Dr. Guy Shane from the AFIT administered the follow-up survey. He left sufficient survey questionnaires and answer sheets to conduct a makeup session on 13 May (APPENDIX RR). Only 23 additional personnel attended the five available sessions. This was disconcerting to the participants who had to complete the same survey again. Once the need for obtaining the paired data to form a basis of comparison for survey responses was explained, the participants became more cooperative and completed the requirement.

Even with the makeup sessions, only a total of 132 of a possible 224 personnel were resurveyed. This author had retained a list of all the personnel who took the base line survey in November 1982. For the following three weeks, section supervisors were given survey booklets and answer sheets and the names of their personnel who still had not completed the follow-up survey. Eventually a total of 184 personnel completed the survey and the answer sheets were forwarded to AFIT for computer tabulation.

It was felt that reliable results would be obtained since over 82 percent of the personnel who completed the base line survey also completed the follow-up survey.

The last steering committee meeting related to this study was held on 26 May. The major item of business conducted was a discussion regarding the hiring of a replacement facilitator. The Nursing Methods Analyst had been functioning as the acting QC facilitator but stressed the fact that the position could not properly be handled as an additional duty. The committee agreed that a successful program needed a full time facilitator. It was decided to process the paperwork for a full time personnel (FTP) overhire in the grade of GS-7 developmental to a GS-9 for a period of one year. The grade of GS-7 was selected rather than a GS-11 because the committee felt that the GS-11 grade was too high for the position. With the decision to hire at the GS-7 level, the job description had to be rewritten with decreased scope of responsibility. The completed SF 52 for the QC facilitator position was forwarded to the Fort Knox CPO in June 1983. It was anticipated that the job would be announced shortly thereafter.

## Summary

### Results Of The AFIT Survey Of Work Attitudes

A complete summary of the average numerical mean response for each question of both the base line and follow-up AFIT Surveys of Work Attitudes is provided at APPENDIX SS. These responses may be cross-referenced with the copy of the AFIT Survey of Work Attitudes at APPENDIX G to compare the responses of each group with the survey questions.

In analyzing the survey results, the reader is referred to Table 1 on page 20. In Block A of Table 1, using the criteria discussed in

Chapter 1, high numerical responses were desirable for this group of questions since this was indicative of the most positive responses. The averaged mean responses of the control group to the Block A questions on the base line survey were somewhat more positive ($\bar{x}$ = 4.621) than the responses of the QC group ($\bar{x}$ = 4.517). However, the results from the follow-up survey revealed a more positive response for the QC group ($\bar{x}$ = 4.644) and a more negative response for the control group ($\bar{x}$ = 4.557).

In Block B of Table 1, low averaged means were considered more positive responses to this grouping of questions. The QC group again showed a slightly increased positive response in scoring averaged mean responses of 4.110 on the base line survey and 4.091 on the follow-up. Correspondingly, the control group displayed more negative responses by scoring averaged mean responses of 4.0387 on the base line survey and 4.137 on the follow-up.

The criteria used to evaluate the question responses in Block C was the same as was used for Block A. The QC group once again (as in Blocks A and B) did not respond as positively to these questions on the base line survey as did the control group. The averaged mean response of the QC group was 4.634 while that of the control group was 4.676. However, the QC group did respond somewhat more positively to the follow-up survey questions for Block C ($\bar{x}$ = 4.705) than the control group who again scored more negatively ($\bar{x}$ = 4.577).

The evaluation of the question responses in Block D was similar to that in Block B, i.e., a lower averaged mean response was indicative of a more positive response. Based on this criteria, the control group once again provided slightly more favorable (positive) responses to this group

of questions on the base line survey. Their averaged mean response was 4.506 while that of the QC group was 4.513. Consistency did prevail in that the QC group responded more positively to the follow-up survey ($\bar{x}$ = 4.506) and the control group responded more negatively ($\bar{x}$ = 4.581).

In every grouping of questions, the control group responded more positively on the base line survey than did the QC group. The opposite was true for the follow-up survey results. These results are summarized in Table 2 below. The arrows pointing upward indicate that high averaged mean responses are indicative of positive results. The arrows pointing downward indicate that low averaged mean responses are indicative of positive responses.

TABLE 2

AFIT Survey Results

| Block of Questions | Group | Base line Survey | Follow-up Survey | Results |
|---|---|---|---|---|
| A ↑ | QC | 4.517 | 4.644 | + |
| | Control | 4.621 | 4.557 | - |
| B ↓ | QC | 4.110 | 4.091 | + |
| | Control | 4.0387 | 4.137 | - |
| C ↑ | QC | 4.634 | 4.705 | + |
| | Control | 4.676 | 4.577 | - |
| D ↓ | QC | 4.513 | 4.506 | + |
| | Control | 4.506 | 4.581 | - |

Statistically speaking, the attitudes and morale of the employees involved with the QC program showed some improvement. As was stated previously, there was a concern that the administration of the second survey may have been accomplished too soon after the base line survey. There was apprehension that effects on employee attitudes, morale, and performance would not be perceiveable so soon after implementation of the program.

There was also a concern that the results obtained from the base line survey may have been inflated due to the initial zeal of the participants. These responses were dramatically more positive than the results of the DCSPER survey which indicated that a definite employee attitude and morale problem existed at IACH. The responses to the AFIT base line survey were so positive that the results of the follow-up survey might have shown no improvement or might have revealed a decline in employee attitudes, morale, and performance. Again, this was not the case as the survey results provided descriptive indications that the attitudes, morale, and performance of the employees involved with quality circles did improve. Conversely, those employees not involved with quality circles statistically displayed a change in attitudes, morale, and performance that was more negative. This could be partially explained by the aggravation that many employees displayed at being required to take the second and same survey twice. Admittedly, the results were not totally conclusive and could have been caused by some other unaccounted for variables that may have been at work.

One other point must be addressed; statistics can be very misleading if used as the only criteria in evaluating the results of most research studies. There was a particular potential for the misinterpretation of data in this

study when the results of the AFIT survey were evaluated. In completing the survey, the respondents were tasked with choosing whole numbered quantitative responses to answer subjective questions. Such choices can be very difficult and totally arbitrary. Oftentimes respondents, with no pre-established opinions or feelings about certain questions, are completely indifferent about which responses they select. If they should happen to choose a response with a numerical value of 4, it would really not make much difference to them if they had chosen a 3 or a 5. Their range of acceptable responses would be from 3 to 5, which equals a numerical difference of 2. According to Table 2, the actual differences in total averaged mean responses between the two study groups was never greater than .128. In summary, these differences were not significant enough to be used as the basis for reaching any definitive conclusions.

Personnel Losses, Use of Sick Leave, Employee Grievances

Part of the second set of criteria used to evaluate the effectiveness of the QC program in improving employee attitudes, morale, and performance, was a comparison of personnel losses, use of sick leave, and the number of employee grievances submitted. Statistics were gathered for Fiscal Years 1980-1982, which was the period preceding the implementation of the QC program at IACH. The official start date of the QC program was set at October 1982 which conveniently marked the start of Fiscal Year 1983. The same data was collected from the start date through June 1983. A graphic summary of this data is provided at APPENDIX TT. Since the statistics available for Fiscal Year 1983 included only the first three quarters, a factor of 1/4 was added to estimate the total year end statistics (FY). Table 3 provides a summary of these statistics. The numbers in parenthesis

represent the actual statistics through the first three quarters of Fiscal Year 1983. Those to the immediate right of the numbers in parenthesis represent the estimated yearly statistics for Fiscal Year 1983.

TABLE 3

Personnel Losses, Use Of Sick Leave, Employee Grievances

| | Personnel Losses | | Sick Leave Used (Hrs/Employee) | | Total Grievances Submitted | |
|---|---|---|---|---|---|---|
| FY 1980 | | 102 | | 70.6 | | 15 |
| FY 1981 | | 106 | | 60.1 | | 22 |
| FY 1982 | | 94 | | 66.2 | | 18 |
| FY 1983 (1st 3 Qtrs) | (47) | 63 | (39.3) | 52.4 | (9) | 12 |

From FY 1980 to 1981 personnel losses increased by 3.92 percent, sick leave usage decreased by 14.87 percent, and the number of grievances submitted increased by 46.67 percent. From FY 1981 to 1982, personnel losses decreased by 11.32 percent, sick leave usage increased by 10.15 percent, and the number of grievances submitted decreased by 18.18 percent. If the existing conditions remained fairly constant, from FY 1982 to FY 1983, it was estimated that personnel losses would decrease by 32.98 percent, sick leave usage would decrease by 20.95 percent, and the number of employee grievances submitted would decrease by 33.33 percent.

In retrospect, since many of the civilian employees at IACH are dependents of Active Duty service members and accompany them on routine Permanent Changes of Station (PCS), the use of personnel losses as a criteria for evaluating the effectiveness of the QC program could be misleading and/or irrelevant. Historically, the majority of summer PCS movements occur during the month of June. The June losses were included in the FY 1983 statistics in Table 3. Thus, it appeared that the number

of personnel losses for all of FY 1983 would be markedly decreased. Future researchers could utilize this variable by prospectively recording specific reasons for personnel turnover, such as: job advancement, accompanying a spouse on a PCS movement, job dissatisfaction, or termination of employment.

The use of sick leave is naturally dependent on the health status and morbidity conditions of the local community. However, with all health status and morbidity factors remaining fairly constant, sick leave rates could prove to be a fairly reliable criteria for evaluating employee levels of satisfaction with their jobs.

Job satisfaction does have much to do with employee attitudes, morale, and performance. If the fourth quarter of FY 1983 had proceeded as the first three quarters, the reduction in the use of sick leave should have been approximately 21 percent which would have amounted to 52.4 hours per employee. This would have been substantially below the Department of the Army goal of 64 hours per employee (APPENDIX UU). Objectively speaking, it was difficult to positively credit the QC program for the projected dramatic reduction in employee use of sick leave. However, it could be considered as more than just a coincidence that both the projected personnel losses and employee use of sick leave levels for FY 1983 would decrease dramatically from the FY 1982 levels. The same reasoning would hold true for the projected decrease in the number of employee grievances submitted in FY 1983. This factor could be the best of the three discussed in this section for objectively evaluating employee attitudes and morale.

### Patient Complaints

The number of patient complaints recorded for the three fiscal year quarters (Oct 82 - Jun 83) after the implementation of the QC program,

increased from the number recorded for the three quarters (Jan 82 - Sep 82) preceding the program. The complete summary of patient complaints (APPENDIX VV) revealed a total of 1182 patient complaints for the period January 1982 through September 1982 and a total of 1207 for the subsequent period. This was an increase of 2.12 percent $(\frac{1207}{1182} - 1 \times 100)$. For the study periods, the total number of complaints increased in 25 duty sections and decreased in 20 sections. Of the six duty sections with quality circles, only the Social Work Service and the Internal Medicine Clinic were patient treatment areas where complaints were received. Over the study period, the complaints in the Social Work Service increased by 47.37 percent $(\frac{28}{19} - 1 \times 100)$ and increased by 2.68 percent $(\frac{115}{112} - 1 \times 100)$ in the Internal Medicine Clinic. Based on these results, it was concluded that the QC program was not particularly successful in improving employee's performance to the extent that less patient complaints were recorded in the Social Work Service and the Internal Medicine Clinic.

## CHAPTER III

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

Based on the results of this study, it was concluded that:

a. The numerical differences, in the before and after average values, of the two groups participating in the AFIT survey, were so small, the conclusion that the attitudes and morale of the QC group improved significantly more than that of the control group, could not be statistically supported. Considering all evaluation criteria and their respective results, there was some indication that the attitudes and morale of the QC group did improve slightly more than that of the control group. Possible effects similar to

those identified by the Hawthorne studies should also not be discounted in that improvements could have occurred irrespective of the QC program.[1]

b. The results of the study provided insufficient evidence to conclude that there were improvements in the work performance of any participants. The only criteria used in attempting to measure performance was patient complaints. Patient complaint data was available for only two of the six QC groups (Social Work Service and Internal Medicine) and four of six control groups (Department of Pathology, Patient Administration Division, Diet Therapy Branch, and Department of Surgery). In actuality, the use of the number of patient complaints to measure levels of employee performance could be very misleading. This is because many patient complaints are caused when the supply of providers and services is insufficient to meet patient demands. Many other factors, over which health care providers have no direct control, precipitate patient complaints which are not reflective of employee performance.

c. A functioning QC program was established at IACH. Group members were extremely enthusiastic and proud of their association with the program. Constructive competition was created between QC groups to determine which one would complete their training first and then move on to problem identification and resolution and management presentations. Sections of the hospital, which were not a part of the pilot project, began to express an interest in starting their own quality circles. It was felt that employee enthusiasm displayed for the program throughout the hospital was at least a start toward diminishing the level of parochialism that the Commander had perceived between the employees and staff.

d. For whatever reason, there was a definite attitude and morale problem at the hospital during the period of the DCSPER survey. This was substantiated by a comparison of the March 1982 negative DCSPER survey

responses to the very positive November 1982 and May 1983 AFIT survey responses.

e. For those sections with active quality circles, their meeting minutes became a means of providing documented evidence, in meeting the JCAH quality assurance requirement, that each section periodically reviewed and evaluated the effectiveness and appropriateness of each service offered.

f. The completed study did provide a guide which any health care facility could follow to establish their own QC programs. Provided was: (1) The sequence of events used to set up a program; (2) A substantial bibliography; (3) Lists of sources for training aids and workshops; and (4) A synopsis of lessons learned which others can avoid.

g. In future studies of this nature, more and better criteria to evaluate changes in performance need to be identified for each group participating. For example, in the Materiel Distribution Service (MDS), performance could have been evaluated by comparing materiel request fill rates and the number of stock lines at zero balance both prior to and after the implementation of the QC program.

## Recommendations

It was recommended that:

a. The QC program be continued at IACH.

b. A full/part time QC facilitator be recruited to replace Mr. Eckels.

c. The TDA be modified to make the facilitator position permanent.

d. The QC program be expanded to include more areas of the hospital.

e. Funding be made available to train the facilitator and to purchase training materials.

Footnote

[1]Keith Davis, "The Hawthorne Studies: A Synopsis," Organizational Behavior: A Book Of Readings, (1977 5th Ed.), p. 33-35.

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